



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,068	09/23/2003	Ta-Chang Fu	HSJ920030136US2	2727
48583	7590	05/08/2006	EXAMINER	
BRACEWELL & PATTERSON, LLP			CAZAN, LIVIUS RADU	
PO BOX 61389			ART UNIT	
HOUSTON, TX 77208-1389			PAPER NUMBER	
			3729	

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/669,068	FU ET AL.	
	Examiner	Art Unit	
	Livius R. Cazan	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-12 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 4/27/2006 has been fully considered and made of record.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the phrase "bracket through which the motor extends on one side of the motor" renders the claim indefinite since, as claimed, a motor passes through a bracket such that the motor extends on one side of itself. Clearly this phrase makes little sense and must be corrected.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuchi et al. (US5309628) in view of Jin-Wei (IBM reference).

a. Regarding claims 1, 2, and 4, Fukuchi et al. disclose:

- (a) providing a spindle motor (motor assembly 21 in Fig. 5) with a hub (body of motor 4 of Fig. 1) extending in a first direction (say upward, as

seen in Fig.5, relative to the top surface of the hub as seen in Fig. 1), a first tooling feature (positioning holes 22 in Fig. 5), and fastener holes (holes on motor assembly 21 through which screws 23 pass; see Fig. 5), an assembly fixture (positioning head 40 in Fig. 5) with a second tooling feature (positioning pins 43 in Fig. 5), and a base (main body 20 in Fig. 5) with a motor opening (see motor opening in body 20, Fig. 5) and fastener holes (holes in body 20 into which screws 23 are received); see col. 5, Ins. 1-20 and 35-55.

- (b) placing the motor in the assembly fixture such that the first and second tooling features engage each other to position the motor in a desired orientation (see Fig. 5; pins 43 engage holes 22; see col. 5, Ins. 15-18) and such that the tooling pin moves in a second direction that is opposite the first direction (clearly, pins 43 in Fig. 5 move in a downward direction during motor installation);
- (c) moving the assembly fixture toward the base; see Fig. 5; see col. 5, Ins. 10-18.
- (d) installing the spindle motor in the motor opening of the base with the assembly fixture such that the fastener holes of the spindle motor and of the base align, and the hub is located on an interior side of the base (see Figs. 3 and 5); and then

- (e) securing the spindle motor to the base with fasteners and removing the hub of the spindle motor from the receptacle in the assembly fixture (see col. 5, Ins. 35-55).

Fukuchi et al. do not disclose providing the motor with a cable.

It is well known in the art that motors must have cables, so as to provide the motor with electricity. Jin-Wei teaches a disk drive having a motor with a cable positioned on an exterior side of a base.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the motor of Fukuchi et al. with a cable, so as to provide it with electricity and control signals.

Fukuchi et al. do not disclose aligning and installing the motor in the motor opening of the base such that the cable is inserted through the motor opening before the motor.

The assembling position-adjusting mechanism disclosed by Fukuchi et al. is perfectly capable of inserting the hub of the motor through a motor opening of a base, and equally capable of installing and securing the motor to a base, as demonstrated above. Although as disclosed in the reference the motor is inserted from an exterior side of a base toward an interior side, the mechanism could just as easily insert a motor from an interior side of a base toward an exterior side, to obtain a disk drive as shown in the Jin-Wei reference, for example. The cable of the motor in

Jin-Wei has clearly been inserted through the motor opening of the base before the motor.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to align and install a motor in a base using the mechanism of Fukuchi such that the motor is inserted from an exterior side of the base toward an interior side of the base and such that the motor cable is inserted through the motor opening before the motor, in order to provide a motor cable on an exterior side of a base.

b. Regarding claim 3, Fukuchi et al. disclose the same invention as the applicant, including preventing rotation of the motor relative to the assembly fixture by engaging the first and second tooling features. Clearly, engaging pins 43 with holes 22 prevents motion of the motor relative to the assembly fixture.

c. Regarding claim 5, as best understood, Fukuchi et al. disclose the same invention as the applicant, including positioning a first tooling feature on one side of the motor and a set of motor fastener holes on an opposite side of the motor. See figure below and Fig. 5. The first tooling feature is positioned on the right side of the motor assembly 21, while some fastener holes are positioned on an opposite side of the motor assembly (left side). As can be seen in Fig. 5, an axis of the motor extends through the bracket 21 (no dotted lines are used to represent the central axis).

Fukuchi et al. do not disclose a circular mounting bracket.

At the time the invention was made, it would have been obvious matter of engineering design choice to a person of ordinary skill in the art to make form a circular bracket, because Applicant has not stated that the shape of the mounting bracket solves a stated problem, is used for a particular purpose, or provides an advantage that a non-circular bracket would provide.

Therefore it would have been prima facie obvious to modify Fukuchi et al. to obtain the invention as specified in claim 5 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Fukuchi et al.

d. Regarding claim 6, Fukuchi et al disclose the same invention as the applicant, except for steps (b) through (e) comprising manually assembling the motor to the base. Clearly, one of even minimal skill in the art would find it obvious that any of steps (b) through (e) could be performed manually, as it is well known to accomplish assembly tasks manually. Applicant's admitted prior art acknowledges this as well (paragraph 6, lines 1 and 2). Furthermore, it would have been an obvious matter of design choice to employ manual assembly, since the applicant has not disclosed that manual assembly solves any stated problem that cannot be solved by robotic assembly.

e. Regarding claim 7, Fukuchi et al. disclose the same invention as the applicant, including robotically manipulating the assembly fixture. Assembly adjusting jig 32 in Fig. 5 is used to manipulate the positioning head 40.

Response to Arguments

6. Applicant's arguments filed 4/27/2006 have been fully considered but they are not persuasive.

The Applicant argues that even if Fukuchi et al. did have a cable, the disclosed mechanism can only move in a path that is perpendicular to platform 30a, and that the mechanism cannot be tilted (like the Applicant's design) to allow a cable to first enter the motor opening before the motor itself. However, in claim 1, Applicants do not recite tilting the tool so as to allow insertion of the cable. Further, it is not specified that the cable is positioned in such a manner which would interfere with the insertion into the motor opening while holding the tool perpendicular to the base. In other words, it is possible for the cable to be bent downward, below the motor, such that it can easily be inserted through the motor opening without tilting the tool.

Regarding claim 2, the Applicant does not specify the plane of reference from which the first direction is considered. As claimed, the hub extends in many directions, including a direction which is opposite the direction in which pins 43 extend.

Regarding claim 5, see the corresponding rejections under 35 U.S.C 112, second paragraph, and 35 U.S.C. 103(a) above.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3729

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LRC 05/03/2006



PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700